

**APPLICATION FOR UNITED STATES LETTERS PATENT  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**(MBHB Case No. 03-910)**

**Title: HEADACHE RACK FOR PICKUP TRUCKS**

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## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

This invention relates to the field of racks for vehicles. More particularly, this invention relates to a headache rack to be mounted behind the rear window of a pickup truck for use in supporting and securing loads being transported as well as protecting the driver and passenger from the load being carried in the pickup truck.

### **2. Description of Related Art**

The prior art reveals a wide variety of racks for pickup trucks. These racks function to support loads being carried in the bed of the pickup truck as well as to protect the driver and any passengers from the load being carried. All of the known racks, however, suffer from common shortcomings.

Pickup trucks do not come in standard dimensions. For example, cabs of pickup trucks vary in height. As a result, manufacturers offer different model racks for trucks with different cab heights. None of the known racks is adjustable to accommodate pickup trucks having different cab heights.

In addition to being used for carrying and supporting loads, racks are also used for mounting lights. Lights are employed to supplement the illumination normally provided by the headlights and the back-up lights. Typically, the lights are mounted on the uppermost surface of the rack. Wires or conductors then extend downwardly from the lights, are secured along the external surfaces of the rack, and eventually are connected to the electrical system of the truck. Various methods such

as cable ties, wire ties, and electrical tape typically have been used to attach the wiring to the rack. The resulting arrangement is not ideal in that the wiring is exposed to the elements and therefore is subject to the elements and possible failure. None of the known racks provides internal wire pathways for the electrical wire so as to protect it from the elements.

Accordingly, what is needed is a pickup truck headache rack that is adjustable to accommodate pickup trucks having different height cabs. There is a further need for a pickup truck headache rack that provides internal electrical pathways so as to protect any wiring from the elements.

### **SUMMARY OF THE INVENTION**

The present invention meets the shortcomings of the prior art by providing a pickup truck headache rack that is adjustable in order to accommodate cabs having different heights. The frame sections telescope with respect to one another, thereby allowing the overall height of the rack to be adjusted. The benefit of such a telescoping feature is that the rack can be used with a number of different pickup trucks having varying cab heights.

The present invention further meets the shortcomings of the prior art by providing a pickup truck headache rack having electrical pathways through which wiring can be pulled. Thus, lights may be mounted along the top of the rack frame and the associated wiring can then be pulled through the pathways provided in the rack frame members. The electrical pathways protect the wiring from the elements.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a perspective view of the headache rack of the present invention mounted on a pickup truck.

Figure 2 is a detailed perspective view of the rack of Figure 1.

Figure 3 is a front view of the rack of Figure 1, shown without the mounting bases.

Figure 4 is a perspective exploded view of the rack of Figure 3.

Figure 5 is a perspective view of one of the mounting bases shown in Figure 1.

Figure 6 is a front, partially cross-sectional view of the rack of Figure 1, depicting the wire pathways.

Figures 7A and 7B are cross-sectional and front views, respectively, of a snap bushing shown in Figure 6.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

With reference to Figure 1, rack 10 is depicted mounted to a pickup truck 12 having a cab 14 with a rear window 16, and a cargo bed 18 having a front wall 20, a back wall 22, two sidewalls 24, 26, and a bottom wall 28. The rack 10 includes a frame 30 having an upper and a lower frame section 32, 34, and a pair of mounting bases 36, 38.

As best seen in Figure 2, the lower frame section 34 comprises a lower rectangular tubular cross bar member 44, a first solid bar member 46, and an intermediate rectangular tubular cross bar member 48, all extending horizontally across the frame 30. The lower frame section 34 is further provided with an angled solid bar member 50, 52 at each end of the lower frame section and a pair of upstanding members 54, 56 extending vertically across the frame section and spaced inwardly from the end bar members. The tubular cross bar members 44, 48 and the solid bar member 46 may be welded to the end bar members 50, 52. Similarly, the upstanding members 54, 56 of the lower frame section 34 may be welded to the various sections of the horizontal members 44, 46, 48.

The upper frame section 32 of the rack comprises a second solid bar member 60 and an upper rectangular tubular cross bar member 62, both extending horizontally across the frame. The upper frame section 32 also includes a pair of upstanding members 64, 66 extending vertically across the frame, one upstanding member located at each end of the frame section. The upstanding members 64, 66 of the upper frame section 32 may be welded to the horizontal members 60, 62.

In order to adjust the height of the overall rack, the frame 30 further includes a pair of rectangular tubular members 70, 72 that are best seen in Figure 4. The tubular members 70, 72 may be welded at one end to respective upstanding members 54, 56 of the lower frame section 34. The other end of each rectangular tubular member 70, 72 mates with a respective upstanding member 64, 66 of the

upper frame section 32 in a telescoping manner, thereby enabling the upper frame section 32 to move with respect to the lower frame section 34. Both the tubular members 70, 72 and the upstanding members 64, 66 of the upper frame section 32 are shown provided with a series of adjusting holes 74, 76. Once the desired height is achieved, the holes of the tubular members 74 and the holes of the upstanding members 76 are aligned, and fasteners 80 are inserted through the holes 74, 76 to lock the rack in place. As shown in Figure 3, two pairs of fasteners 80 are used for purposes of locking the rack. It should be understood that any arrangement of suitable fasteners could be used for this purpose. Further, the telescoping feature is not limited to the geometry of the members depicted in the Figures, but rather encompasses other suitable geometries as well. It is the telescoping feature that allows the overall height of the rack to be adjusted as needed.

The rack is provided with a pair of mounting bases 36, 38 for mounting the rack to the cargo bed sidewalls 24, 26 of a pickup truck 12. The features of the mounting bases 36, 38 are best seen in Figure 5, in which one of the bases is depicted. It should be understood that the remaining base is the mirror image of that shown in Figure 5. Each base 36, 38 includes a frame mounting bracket 86, a horizontal mounting surface 88, a vertical mounting surface 90, and a mounting flange 92. The holes depicted on the base accommodate suitable fasteners such as bolts. The frame mounting bracket 86 attaches to the lower frame section 34. The horizontal mounting surface 88 lies on the top of the side wall 24, 26 of the pickup

truck cargo bed while the vertical mounting surface 90 abuts against the vertical lip of the cargo bed sidewall 24, 26. The flange 92 abuts against the front sidewall 20 of the cargo bed of the pickup truck. Alternate geometries and supports can be used for the rack mounting.

The rack of the present invention, including the frame sections and the mounting bases, may be constructed from steel or aluminum.

Referring to Figure 6, the wire pathways provided in the rack are depicted with dashed lines 102. Wire can enter or exit the rack through one of the access holes 104 along the upper rectangular tubular cross bar member 62 of the upper frame section 32. The wire can then be run through either set of upstanding members 54, 56, 64, 66 towards the lower rectangular tubular cross bar member 44. A plurality of snap bushings 106 is installed internally along the pathway to protect the wiring. Access holes 110 are provided through the lower rectangular tubular cross bar member 44 through which wiring may enter or exit the rack. From the access holes 110, the wiring is then connected to the electrical system (not shown) of the truck.

To further protect the wiring from the elements, closures are provided for the openings 114, 116 at the upper ends of the upstanding members 64, 66 of the upper frame section 32. After the wiring has been run, a plug 120 is inserted into each opening 114, 116 and a cap 122 is slid down over the upper end of each upstanding member 64, 66.

In addition, as seen in Figure 4, bolts 124 with blind fasteners 126 may be used to seal the access holes 104 that are not used. Similarly, plugs 128 may be provided for the access holes 110. In order to allow wire entry/exit, a hole may be drilled in the center of each plug 128.

To install the rack 10, the upper frame section 32 is mounted onto the lower frame section 34 via the tubular members 70, 72. The end members 50, 52 of the frame are then bolted to the mounting brackets 86 of the mounting bases 36, 38, which are in turn bolted to the cargo bed 18. On both the driver's side and the passenger side, one bolt fastens the horizontal mounting surface 88 to the top of the sidewall 24, 26 of the cargo bed 18, two bolts through the vertical mounting surface 90 into the vertical lip of the cargo bed sidewall 24, 26, and one bolt through the flange 92 into the front sidewall 20 of the cargo bed 18. As depicted in Figure 1, the rack is positioned in the forward end of the cargo bed 18 of a pickup truck 12, with the frame 30 adjacent to the rear window 16 of the cab 14 of the truck 12. The height of the rack 10 is then adjusted to accommodate the particular pickup truck cab 14. If lights are mounted on the upper rectangular tubular cross bar member 62, then the wiring can be run internally as previously described above.

In addition to supporting and securing loads being transported in pickup trucks, the rack protects the rear window from damage while at the same time protecting the passengers seated in the cab from harm. One advantage of the rack of the present invention is that it can be used with pickup trucks having different cab



heights. A further advantage of the rack is that it provides wiring pathways to safely run wiring from any lights mounted on the uppermost member of the rack through the rack to the pickup truck's electrical system.

While certain features and embodiments of the present invention have been described in detail herein, it is to be understood that the invention encompasses all modifications and enhancements within the scope and spirit of the following claims.